

CLAIMS

What is claimed is:

1. A method for providing information to a satellite positioning system (SPS) receiver, said method comprising:
determining an ordered set of SPS satellites in view of a mobile SPS receiver having an approximate location, the ordered set based on the approximate location which is determined from at least one of a location within a cellular service area which includes a cellular transmission site in cellular communication with a communication system coupled to the mobile SPS receiver or a representative location associated with the cellular transmission site, wherein an order of SPS satellites in the ordered set is based on a location of at least some of the SPS satellites.
2. A method, as in claim 1, wherein the order of the SPS satellites in said ordered set provides a position solution which uses satellites having a desired geometry relative to one another.
3. A method, as in claim 1, wherein the order of SPS satellites in the ordered set provides a position solution which uses the SPS satellites having a desired geometry relative to the mobile SPS receiver.
4. A method, as in claim 1, wherein the order of SPS satellites in the ordered set is based upon a probability of SPS satellite signal acquisition.
5. A method, as in claim 1, wherein the order of SPS satellites in the ordered set is based on an estimate of measurement quality from the SPS satellites.
6. A method comprising:
determining an ordered set of SPS satellites in view of a location of a cell of a cellular communication system at a given time; and
transmitting the ordered set of SPS satellites.

7. A method, as in claim 6, wherein an order of SPS satellites in the ordered set is determined in a manner selected from the group consisting of,
- minimizing a geometric dilution of precision (GDOP),
 - minimizing a position dilution of precision (PDOP),
 - minimizing a horizontal dilution of precision (HDOP),
 - providing a position solution which uses SPS satellites having a desired geometry relative to one another,
 - providing a position solution which uses SPS satellites having a desired geometry relative to the mobile SPS receiver,
 - determining a probability of SPS satellite signal acquisition,
 - determining an estimate of measurement quality from the ordered set of SPS satellites,
 - providing an optimal geometric trilateration solution, and
 - determining a user defined selection criteria; and
- wherein a mobile SPS receiver located within the cell of the cellular communication system may receive the ordered set of SPS satellites.
8. A method, as in claim 6, wherein said determining further comprises determining satellite health information.
9. A method, as in claim 7, wherein said determining is done according to a *Best-n* method and said determining further comprises determining satellite health information.
10. A method, as in claim 6, wherein said transmitting is from a cellular transmission site.
11. A method comprising:
- receiving a transmission from a mobile satellite positioning system (SPS) receiver within a cell of a cellular communication system, the mobile SPS receiver being configured to transmit and receive cellular signals;

determining an ordered set of SPS satellites in view of the mobile SPS receiver,
at a given time, based in part on said receiving; and
transmitting the ordered set of SPS satellites;
such that the mobile SPS receiver may receive the ordered set of SPS satellites.

12. A method, as in claim 11, wherein an order of SPS satellites in the ordered set is determined in a manner selected from the group consisting of,
minimizing a geometric dilution of precision (GDOP),
minimizing a position dilution of precision (PDOP),
minimizing a horizontal dilution of precision (HDOP),
providing a position solution which uses SPS satellites having a desired
geometry relative to one another,
providing a position solution which uses SPS satellites having a desired
geometry relative to the mobile SPS receiver,
determining a probability of SPS satellite signal acquisition,
determining an estimate of measurement quality from the ordered set of SPS
satellites,
providing an optimal geometric trilateration solution, and
determining a user defined selection criteria.
13. A method, as in claim 11, wherein said determining further comprises
determining satellite health information.
14. A method, as in claim 12, wherein said determining is done according to a *Best-
n* method and said determining further comprises determining satellite health
information.
15. A method, as in claim 11, wherein said transmitting is from a cellular
transmission site.

16. A method comprising receiving an ordered set of satellite positioning system (SPS) satellites the ordered set being determined by a mobile SPS receiver.
17. A method comprising using a history of stored global positioning system (GPS) satellite signal quality information for a location to determine an ordered set of satellite positioning system (SPS) satellites.
18. A method comprising using mobile SPS receiver information to determine an ordered set of satellite positioning system (SPS) satellites.
19. An apparatus comprising:
 - a server to determine an ordered set of satellite positioning system (SPS) satellites in view of a location of a cell of a cellular communication system at a given time ; and
 - a transmitter, coupled to said server, to transmit the ordered set of SPS satellites.
20. A server, as in claim 19, further comprising:
 - a processor; and
 - an information source coupled to said processor, said information source containing sets of the SPS satellites in view of locations of cells of the cellular communication system and said processor to determine the ordered set of SPS satellites for the location and wherein a mobile SPS receiver located within the cell may receive the ordered set of SPS satellites.
21. A server, as in claim 20, wherein said server is coupled to at least one of a global positioning system (GPS) reference server, a cellular switching center, a location server, a cellular transmission site, a base station controller, and a mobile satellite positioning system (SPS) receiver.

22. An apparatus, as recited in claim 21, wherein said apparatus is capable of being coupled to another apparatus which issues a request to provide information to said another apparatus.

23. An apparatus, as recited in claim 22, wherein said apparatus and said another apparatus are coupled through the Internet.

24. An apparatus, as recited in claim 19, wherein said transmitter comprises a network interface device which transmits data into a network.

25. A computer readable medium containing executable computer program instructions which, when executed by a data processing system, cause the data processing system to perform a method comprising:

determining an ordered set of satellite positioning system (SPS) satellites in view of a location of a cell of a cellular communication system at a given time; and
transmitting the ordered set of SPS satellites.

26. A computer readable medium, as in claim 25, wherein an order of SPS satellites in the ordered set is determined in a manner selected from the group consisting of,
minimizing a geometric dilution of precision (GDOP),
minimizing a position dilution of precision (PDOP),
minimizing a horizontal dilution of precision (HDOP),
providing a position solution which uses SPS satellites having a desired geometry relative to one another,
providing a position solution which uses SPS satellites having a desired geometry relative to the mobile SPS receiver,
determining a probability of SPS satellite signal acquisition,
determining an estimate of measurement quality from the ordered set of SPS satellites,
providing an optimal geometric trilateration solution, and

determining a user defined selection criteria.

27. A computer readable medium, as in claim 25, wherein said determining further comprises determining satellite health information.

28. A computer readable medium, as in claim 26, wherein said determining is done according to a *Best-n* method and said determining further comprises determining satellite health information.

29. A computer readable medium, as in claim 25, wherein said transmitting is from a cellular transmission site.

30. A method comprising:
determining an ordered set of SPS satellites in view of a mobile SPS receiver at
a given time; and
transmitting the ordered set of SPS satellites;
such that a server may receive the ordered set of SPS satellites in view of the
mobile SPS receiver.

31. A method, as in claim 30, wherein said transmitting is from a cellular transmission site.

32. A computer readable medium containing executable computer program instructions which, when executed by a data processing system, cause the data processing system to perform steps comprising:
determining an ordered set of SPS satellites in view of a SPS receiver at a given
time; and
transmitting the ordered set of SPS satellites to a cellular transmission site, said
transmitting is capable of being coupled to the data processing system;
such that a server may receive the ordered set of SPS satellites in view of the
SPS receiver.

33. An apparatus, as in claim 19, wherein the ordered set of SPS satellites is transmitted to a cellular transmission site.